Capital Improvement Projects Submission

PWB #15-01 Addition/Renovation To Computer Facility

PWB #15-02 Renovations to Mountain Top Communications Sites

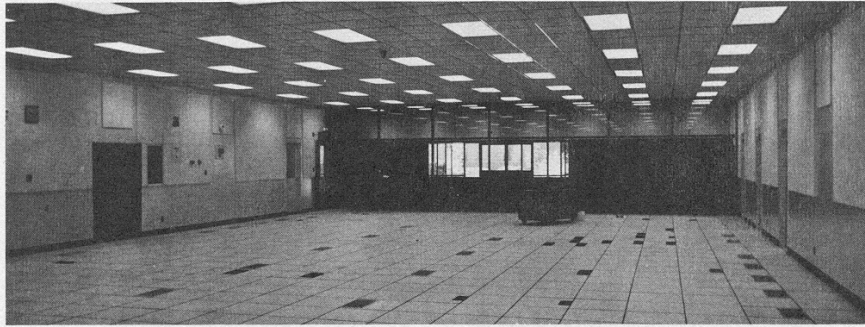**PWB #15-03 Building Security Enhancements**

STATE OF NEVADA
DoIT
DEPARTMENT OF INFORMATION TECHNOLOGY

Capital Improvement Project Submission

Addition/Renovation To Computer Facility

Public Works Project Number: 15-01

PWB Estimated Cost $ 3,944,508

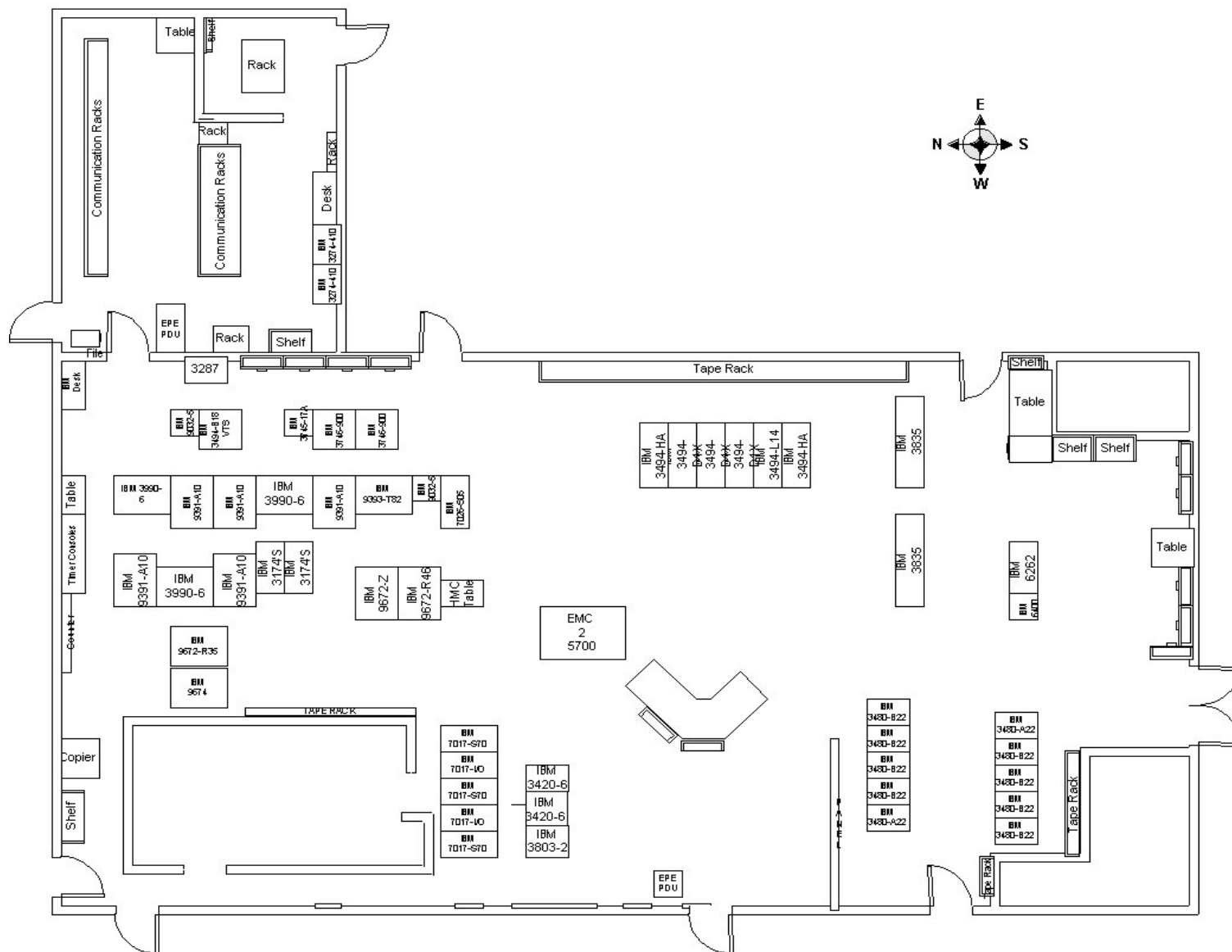*Computer Facility*

575 East Third Street,

Carson City, Nevada

Computer Room Floor – 1971

In 1969 the Nevada State Legislature appropriated $535,600 from the General Fund in the State Treasury to the State Planning Board for the purpose of planning, designing, furnishing, and equipping a Computer Facility at the Capitol Complex in Carson City.

Computer Room Floor – 2002

Presently the Computer Facility is 14,400 square feet. 13,000 square feet are for data and telecommunications equipment. 1,400 square feet accommodates 41 onsite personnel. This includes a 375 square foot conference room and hallways.

Diagram of Computer Room and equipment - 2002

Equipment is densely packed on the raised floor.

IFS Risk boxes and tape drives left. Storage and mainframe equipment right.

Access to the equipment is difficult.

Rehabilitation

The interior and the structure of the Computer Facility are currently undergoing an assessment by Public Works.

- Structure
  - There are great concerns regarding the survival of tilted slab buildings, such as the Computer Facility, during seismic activity.

- Environment
  - Lead based paint, asbestos, Halon in the tape vaults, and stress due to working in close quarters pose potential health risks.
  - The Edwards Fire Alarm panel is now obsolete and outdated.

Rehabilitation

- ◆ Other Concerns
    - → Security
    - → Disaster Recovery
    - → Business Continuity
    - → 24 x 7 x 365 Support

East Wall of the Computer Room. Located behind the VTS (Virtual Tape System) are racks of round tapes, software manuals, and various machines.

UNIX Boxes
and
Server Farm

Narrows to 13 inches of
walk space and access
between the equipment

What is now the Modem Room was not originally designed for equipment operation. It has no environmental controls and in summer can reach temperatures over 80 degrees.
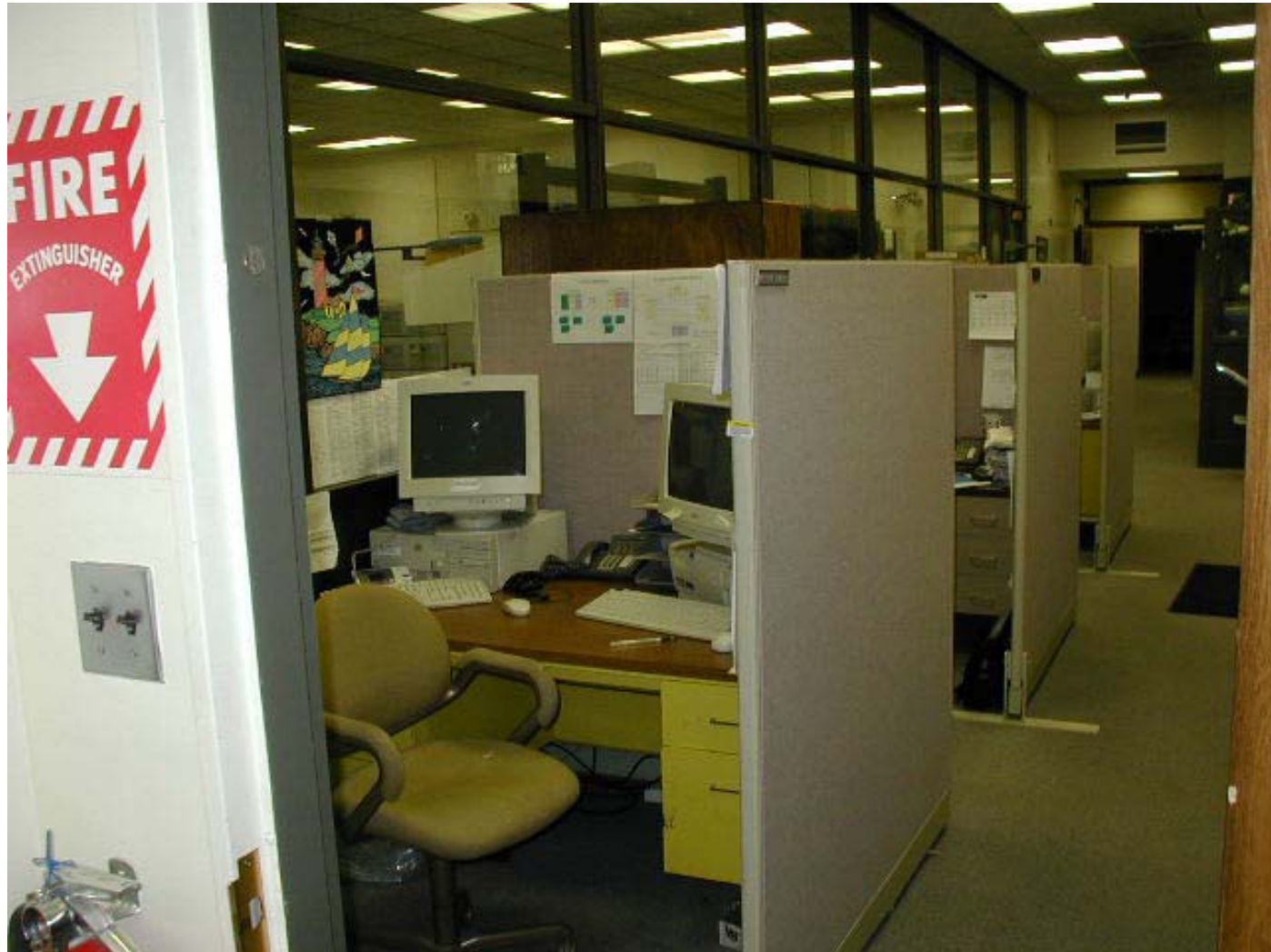
Expansion

The addition to the Computer Facility will accommodate increased security needs, disaster recovery and facilities for a consolidated network operations center (combining computer operations and network operations). This will provide for a true 24 x 7 x 365 environment in the Operations Center.

Several parts of the DoIT team are presently needed, and would be relocating to the expansion:

- Help Desk (three people)

- Internet Staff (three people)

- UNIX Staff (two people)

- WAN group (four people)

This office, shared by three of the Operations Supervisors, consumes valuable space on the raised Computer Room floor.

There are five offices in this section of the building, formerly a hallway.

Average office space is 5 feet long by 5 feet wide.

The Systems Manager and Network/Security/Unix Manager share an office resulting in lack of privacy.

Expansion

The modifications to the existing Facility, in order to facilitate the addition, include:

- General space remodeling of office areas

- Updating the raised flooring system to meet current seismic design

- Converting existing Halon fire suppression to standard ENERGEN or FM-200 equivalent

- Replacement of the Edwards Fire Alarm panel due to obsolescence

- Installation of a perimeter fence that encloses the parking lot

- Resurface the existing parking lot to eliminate hazardous cracks and sink holes.
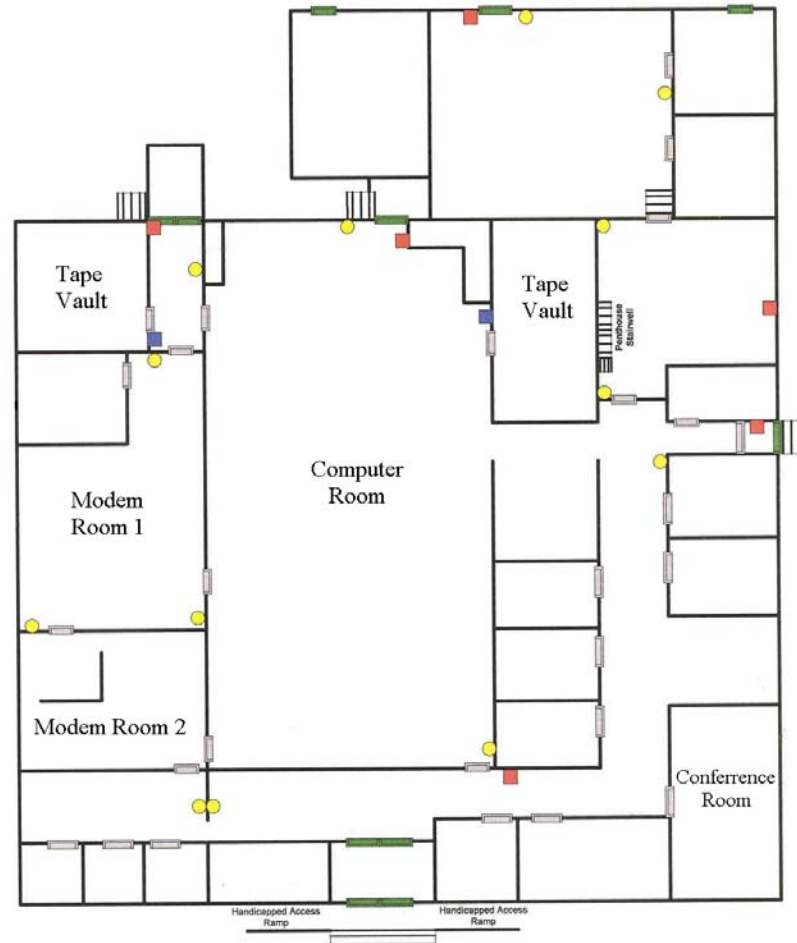
The crack in the wall and ceiling of the tape vault is one of many found throughout the building.

An example of settling, the concrete steps outside of the building are separating. Several other examples can be found on the exterior of the building.

Computer Facility Floor Plan

Risk Assessment

RENOVATION

Public Works building assessment is not yet completed. We will have a better understanding of the risks once the foundation, structure and health factors have been evaluated.

Recent losses due to both terrorist attacks and natural hazards such as earthquakes and fires have forced us to review the business continuity process—one that focuses on proactive risk reduction and loss control. The structure that house a large part of the technology infrastructure for the State of Nevada is aging and deteriorating.

Risk Assessment

If a retrofit/renovation is not completed, then it is expected that:

Business disruptions may increase due to environmental/mechanical failures.

Repair and maintenance costs will continue to escalate.

Frequency of emergency repairs will continue to increase.

Liability from employee's health could become a factor.

A relatively small seismic event could threaten lives and disrupt business.

Utility costs will continue to escalate.

Risk Assessment

EXPANSION

With the recent emphasis on disaster recovery, it has become evident that the current area is too small to continue to support the equipment and personnel needed to run the state's data processing center effectively and efficiently. For example, the Internet support staff is located off-site and away from their equipment and must frequently commute to effect repairs and upgrades.

Consolidation of DoIT's computer operations, network operations, internet operations and help desk into one centralized secure location would allow greater efficiency in supporting the needs of the State of Nevada. As infrastructure and architecture are standardized, other agencies can take advantage of this 24x7x365 operations center.

STATE OF NEVADA

DoIT

DEPARTMENT OF INFORMATION TECHNOLOGY

Capital Improvement Project Submission

Renovations to Mountain Top Communications Sites

Public Works Project Number: 15-02

PWB Estimated Cost $ 961,123

Renovations To Mountain Top Communication Sites

<u>BACKGROUND</u>

- **NRS 242 MANDATE**.   DoIT operates a statewide communications network in support of Public Safety, State and Local Government and Rural county locations throughout the State of Nevada.

- **INCREASING IMPORTANCE**. Historically the system has supported voice and radio communications. Now, with convergence of technologies, the communication system carries telephone, data, video and radio.

- **COMPONENTS**. Electronic System itself, and Communication Sites

- **PROJECT**. Replace buildings and site infrastructure at 6 (of 54) communications sites determined to be in critical condition.

Renovations To Mountain Top Communication Sites

<u>PRESENT STATUS</u>

- **AGE - EARLY '70s INSTALL**. 5 of 6 sites were constructed 30 years ago, in the early 1970's. One was constructed by the Air Force in the mid 1950′s.

- **SURPLUS TRAILER VANS**. Most site shelters are converted surplus box transport trailers having the wheels removed. They were already old in 1970. Bullets pass right through them.

- **ORIGINALLY TEMPORARY**. The trailers are simply placed on railroad ties. At the time of installation it was the expectation they would be temporary.

- **VULNERABLE MODIFICATIONS**. Modifications to the trailers was required to accommodate the equipment and racking. Sections of the trailers had roof sections cut out and vestibules added.

- **LEAKAGE.** Rust, corrosion, damaged seams and collapsed roof structures have allowed water, dust, cold and heat to damage sensitive electronics. Roof top maintenance is an annual occurrence.

Typical 1970's Site Installation

Montezuma Peak - Installed 1971

Pinenut Mountain – Installed 1972

PROBLEM

In their present condition, these six communication sites are a continuing problem and threat to public safety and state communications

EXTREME WEATHER CONDITIONS

Surplus Shelter

Solar Panels and Tower

Renovations To Mountain Top Communication Sites

<u>OBJECTIVES</u>

- **ENVIRONMENTAL PROTECTION**. To provide environmentally protected and controlled enclosures for sensitive electronic equipment.

- **PHYSICAL SECURITY**. To provide a physically secure environment for critical communications systems. Current enclosures do not provide protection from forced-entry or gunfire.

- **IMPROVE RELIABILTY, LOWER RISK**.   To provide reliable communications infrastructure to Public Safety and State of Nevada agencies, thereby lowering risk of communication disruptions.

Modern Site Installation - 1994

Renovations To Mountain Top Communication Sites

WITHOUT THIS PROJECT

- **MORE OUTAGES**. As rain and wind are allowed into the buildings, electronic equipment will continue to be damaged and fail. To date measures such as plastic garbage bags and tarps have been used inside these enclosures to prevent moisture from getting into this equipment.

- **INCREASED COST**. Lack of site reliability will result in critical public safety agencies relocating equipment to other dedicated non shared facilities. This will result in an increased cost to the State through a duplication of resources.

- **LOWERED EQUIPMENT LIFE**. Lack of adequate protection from heat and cold has resulted in early component failures and will continue to lower the equipment life expectancy.

- **INCREASED PERSONNEL RISK**. Maintenance activities, already high at these sites, will increase as the mountain-top infrastructure deteriorates. State personnel will be increasingly placed at risk when forced to access a site in extreme winter environmental conditions to correct a failing mountain top site.

STATE OF NEVADA

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DEPARTMENT OF INFORMATION TECHNOLOGY

Capital Improvement Project Submission

Building Security Enhancements

Public Works Project Number: 15-03

PWB Estimated Cost $ 69,266

Building Security Enhancements

DESCRIPTION and STATUS

- Project installs security card swipe system at four DoIT locations.

- Kinkead; Facility; Curry St; Moundhouse

- Only Facility has ID access control system now.

- Kinkead does not have alarm.

Building Security Enhancements

DRIVING FACTORS

- Increasing value and criticality of IT systems and data to state and citizens

- Increasing efforts by terrorist/hackers to access or disrupt

- Increasing need and demand by employees for security and safety

Building Security Enhancements

PROJECT OBJECTIVES

- Improved control of physical access to systems

- Better control of access to state data

- Improved safety of employees

- Improved tracking and accountability of individuals